

WHAT IS CLAIMED IS:

1. An illumination apparatus which directs light  
from a light source to an illuminated area, comprising:  
a plurality of light emitters as the light source;  
5 a lighting unit configured to cause the light  
emitters to emit light so that the intensities of light  
emitted by them can be adjusted;  
an optical system configured to, of light emitted  
by the emitters, direct light passed through its light  
10 concentration area to the illuminated area;  
a light control member configured to perform at  
least one of changing the path of light from the  
emitters to be directed to the illuminated area and  
moving of the light emitters;  
15 a movement unit configured to allow the light  
control member to operate; and  
a light selector control unit configured to  
control at least one of the movement unit and the  
lighting unit so as to select light to be directed to  
20 the illuminated area from light of the emitters,  
wherein the light selector control unit controls  
the lighting unit to cause an emitter to emit light  
when it is positioned in the vicinity of the light  
concentration area by the operation of the light  
25 control member.
2. The apparatus according to claim 1, wherein  
the light selector control unit controls the lighting

unit so that, when an emitter does not face the light concentration area by the operation of the light control member, it emits light the intensity of which is weaker than when it faces the light concentration area.

5           3. The apparatus according to claim 2, wherein the light selector control unit controls the lighting unit so as to turn off an emitter while it does not face the light concentration area by the operation of the light control member.

10           4. The apparatus according to claim 1, wherein the light selector control unit controls the lighting unit so as to cause an emitter to emit light continuously while it faces the light concentration area.

15           5. The apparatus according to claim 4, wherein the light selector control unit controls the lighting unit so as to vary the intensity of light emitted by the emitter to be emitted during continuous emission.

20           6. The apparatus according to claim 5, wherein the light selector control unit controls the lighting unit so as to increase the magnitude of a current applied to the emitter with time during continuous emission.

25           7. The apparatus according to claim 4, wherein the light selector control unit controls the lighting unit so as to cause an emitter to emit light only while

its light emitting surface is covered in its entirety with the light concentration area.

8. The apparatus according to claim 1, wherein the light selector control unit controls the lighting unit so as to cause a plurality of emitters which are positioned in the vicinity of the light concentration area to emit light simultaneously.

9. The apparatus according to claim 1, wherein the light selector control unit controls the following two states: the transient state in which at least one of the movement unit and the lighting unit is controlled in order to allow a selection from the emitters; and the stable state in which a selection can be made from the emitters, and wherein the stable state is the one in which the illuminated area is illuminated.

10. A projector display apparatus comprising:  
an illumination apparatus which directs light from a light source to an illuminated area including:  
a plurality of light emitters as the light source;  
a lighting unit configured to cause the light emitters to emit light so that the intensities of light emitted by them can be adjusted;  
an optical system configured to, of light emitted by the emitters, direct light passed through its light concentration area to the illuminated area;

a light control member configured to perform at least one of changing the path of light from the emitters to be directed to the illuminated area and moving of the light emitters;

5 a movement unit configured to allow the light control member to operate; and

a light selector control unit configured to control at least one of the movement unit and the lighting unit so as to select light to be directed to the illuminated area from light of the emitters,

10 wherein the light selector control unit controls the lighting unit to cause an emitter to emit light when it is positioned in the vicinity of the light concentration area by the operation of the light control member;

15 a light modulation device placed in the illuminated area configured to light-modulate light from the illumination apparatus according to image data;

20 a projection unit configured to project light modulated by the light modulation device; and

a light modulation device control unit configured to switch the light modulated states of the light modulation device,

25 wherein the light selector control unit of the illumination apparatus selects an emitter to emit light in synchronism with the switching of the light

modulated states of the light modulation device.

11. The apparatus according to claim 10, wherein  
the light selector control unit in the illumination  
apparatus does not change a selected emitter during a  
5 modulation period from a point of time of switching to  
the next point of time of switching.

12. The apparatus according to claim 11, wherein  
the light modulation device is of a pulse width  
modulation type which represents the light modulated  
10 states according to image data in terms of one period  
of the modulation period.

13. The apparatus according to claim 10, wherein  
the light modulation device control unit  
represents the image data in one frame period, and  
15 the light selector control unit in the  
illumination apparatus selectively turns on a fixed  
number of emitters during the frame period.

14. The apparatus according to claim 13, wherein  
the light modulation device is of a pulse width  
20 modulation type which represents the light modulated  
states according to image data in terms of one period  
of the modulation period.

15. The apparatus according to claim 10, wherein  
the movement unit in the illumination apparatus is  
25 configured to repeat operation and stop, and  
the light selector control unit in the  
illumination apparatus selects an emitter position in

the light concentration area when the movement unit is placed in the stopped state.

16. The apparatus according to claim 10, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so that, when an emitter does not face the light concentration area by the operation of the light control member, it emits light the intensity of which is weaker than when it faces the light concentration area.

17. The apparatus according to claim 16, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so as to turn off an emitter while it does not face the light concentration area by the operation of the light control member.

18. The apparatus according to claim 10, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so as to cause an emitter to emit light continuously while it faces the light concentration area.

19. The apparatus according to claim 18, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so as to vary the intensity of light emitted by the emitter to be emitted during

continuous emission.

20. The apparatus according to claim 19, wherein  
the light selector control unit in the illumination  
apparatus controls the lighting unit in the  
5 illumination apparatus so as to increase the magnitude  
of a current applied to the emitter with time during  
continuous emission.

21. The apparatus according to claim 18, wherein  
the light selector control unit in the illumination  
10 apparatus controls the lighting unit in the  
illumination apparatus so as to cause an emitter to  
emit light only while its light emitting surface is  
covered in its entirety with the light concentration  
area.

15 22. The apparatus according to claim 10, wherein  
the light selector control unit in the illumination  
apparatus controls the lighting unit in the  
illumination apparatus so as to cause a plurality of  
emitters which are positioned in the vicinity of the  
20 light concentration area to emit light simultaneously.

23. The apparatus according to claim 10, wherein  
the light selector control unit in the  
illumination apparatus controls the following two  
states: the transient state in which at least one of  
25 the movement unit and the lighting unit in the  
illumination apparatus is controlled in order to allow  
a selection from the emitters; and the stable state in

which a selection can be made from the emitters, and  
the projector display apparatus is allowed to make  
a projector display in the stable state.

24. An illumination apparatus which directs light  
5 from a light source to an illuminated area, comprising:  
a plurality of light emitters as the light source;  
lighting means for causing the light emitters to  
emit light so that the intensities of light emitted by  
them can be adjusted;

10 optical means for, of light emitted by the  
emitters, directing light passed through its light  
concentration area to the illuminated area;

a light control member for performing at least one  
of changing the path of light from the emitters to be  
15 directed to the illuminated area and moving of the  
light emitters;

movement means for allowing the light control  
member to operate; and

light selector control means for controlling at  
20 least one of the movement means and the lighting means  
so as to select light to be directed to the illuminated  
area from light of the emitters,

wherein the light selector control means controls  
the lighting means to cause an emitter to emit light  
25 when it is positioned in the vicinity of the light  
concentration area by the operation of the light  
control member.



25. A projector display apparatus comprising:

an illumination apparatus which directs light from  
a light source to an illuminated area including:

a plurality of light emitters as the light  
5 source;

lighting means for causing the light emitters  
to emit light so that the intensities of light emitted  
by them can be adjusted;

optical means for, of light emitted by the  
10 emitters, directing light passed through its light  
concentration area to the illuminated area;

a light control member for performing at  
least one of changing the path of light from the  
emitters to be directed to the illuminated area and  
15 moving of the light emitters;

movement means for allowing the light control  
member to operate; and

light selector control means for controlling  
at least one of the movement means and the lighting  
20 means so as to select light to be directed to the  
illuminated area from light of the emitters,

wherein the light selector control means  
controls the lighting means to cause an emitter to emit  
light when it is positioned in the vicinity of the  
25 light concentration area by the operation of the light  
control member;

a light modulation device placed in the

illuminated area for light-modulating light from the  
illumination apparatus according to image data;

projection means for projecting light modulated by  
the light modulation device; and

5       light modulation device control means for  
switching the light modulated states of the light  
modulation device,

          wherein the light selector control means of the  
illumination apparatus selects an emitter to emit light  
10       in synchronism with the switching of the light  
modulated states of the light modulation device.